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The AMERICAN DENTAL JOURNAL

BERNARD J. CIGRAND, M. S., D. D. S.

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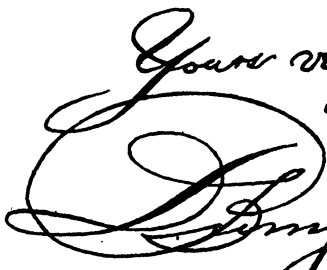
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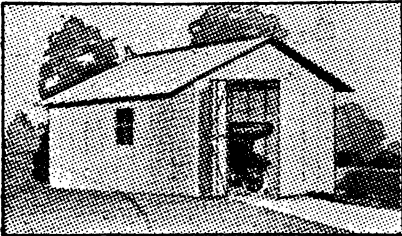
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TABLE OF CONTENTS

|                                                                                                                                                                             |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| EDITORIAL—                                                                                                                                                                  | PAGE |
| Fear of Pain—and Dental Neglect .....                                                                                                                                       | 141  |
| Comment.....                                                                                                                                                                | 146  |
| That Rubber Face-Piece.....                                                                                                                                                 | 147  |
| ORIGINAL CONTRIBUTIONS—                                                                                                                                                     |      |
| Heterologous Dental Implantation. By Professor John B. Murphy.....                                                                                                          | 148  |
| Flag of Wordly Weave. By Dr. Bernard J. Cigrand, National President of<br>the American Flag Day Association and Personal Representative of<br>President Woodrow Wilson..... | 154  |
| Radium, the Magic Metal. By Priscilla Leonard.....                                                                                                                          | 157  |
| Weighed in the Balance and Found Wanting.....                                                                                                                               | 160  |
| A Chance for Every Tooth .....                                                                                                                                              | 163  |
| Amalgam Worked Dry.....                                                                                                                                                     | 164  |
| Harelip and Cleft Palate .....                                                                                                                                              | 164  |
| Vegetables with Medicinal Properties .....                                                                                                                                  | 164  |
| Are False Teeth an Italian Invention?.....                                                                                                                                  | 165  |
| Transmutation Among Microbes. By Mme. Victor Henri.....                                                                                                                     | 166  |



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June 15

EDITORIAL AND COMMENT

1914

## FEAR OF PAIN—AND DENTAL NEGLECT

Recent reports show that in civilized countries fully eighty-five per cent of the rising generations are afflicted with oral and dental troubles; that among the adults more than sixty-five per cent have unnecessarily lost dental organs; while the percentage of those who are actually suffering from one form or other of dental disturbance would reach as high as ninety per cent.

There are four causes for this astonishing condition of affairs. Placing them in their order as I have observed them, they would be as follows:

*First.* The value of good teeth or the destructive influence of disorganized dental organs are not known to the masses. Our campaign of dental education has scarcely touched the shore line of the immense sea of humanity. The public is uninformed,

and we as a profession have not fully preached "from the house-tops." Our dental journals and the press in general have yet to use tons of paper and barrels of printer's ink.

*Second.* Those who do know of the theorem of life—that



"NOW PLEASE DON'T BE AFFRAID, THE DENTIST  
WILL BE KIND AND NOT HURT YOU"

good health and perfect dental organization are usually akin—dread to have inflicted upon them the pain which too frequently goes with dental reparation—fear of being hurt, and a natural



shrinking from any pain, especially of that character to be found in the average dental office. To this second element in the cause your editor expects to address a few editorials in the hope that every dentist may appreciate the fact that he can cut down the percentage of dental sufferers if he will religiously apply himself to searching after methods which are adaptable to certain given cases; for a treatment which may be painless or agreeable to one patient may be torture in the extreme to some other patron. Or the treatment which would be suggested at one period of life might be contraindicated at another time in the same person. Youth and old age require study; male and female demand our most discriminative judgment; and to the "how" and the "why" of overcoming the exhausting influence of fear in the dental chair a few editorials will be given; and incorporated in these profitable suggestions will be included ideas from the most distinguished operators and prosthetic practitioners that my personal acquaintance affords.

You may think it is all important to know the latest technic of construction, and that your financial success depends simply on how to execute a given operation. You may be of the mind that money will come to you if you know how to construct a bridge, form a crown or insert a filling (plastic or metallic), but you may be ignorant of the fact that the preparatory work—that of shaping the roots, creating the basic structure or forming the cavity—is fully as essential, and stamps you as artist or artisan—medically inclined, with sympathy as an element, or brutally inclined with only materialistic results as your aim.

It is just as important to be able to induce your patient to undergo a certain pain-begetting task as to be able to accomplish the operative conclusions. Besides, if you are too businesslike, too prompt, too eager, too dictatorial and naturally too severe and cross, you may be able to begin the dental work, but some other dentist of a kindlier nature will complete it.

It is absolutely astonishing how much unwarranted pain is inflicted by the hard-hearted and cruelly disposed dentist. We have all seen these "lack of sympathy" kind; they flourish at clinics and abound in the "score of operators'" parlors. What

a business atmosphere pervades his every action! Every stroke of the mallet, every push of the hand, must bring definite steps of "quick-finished work." The patient does not live (in his mind); the patient does not breathe; the patient has neither nerves or sense (in his estimation). He just plows along in sensitive dentine as would a farm hand turn the meadow sod. With his mind wrapped up in some personal affair,—likely a social engagement or a speculation of "money-making,"—he is absolutely unmindful of the sufferer in his chair; and the heated bur or the dull chisel responds to his eagerness to get that patient out of the chair at a set or prearranged time. This cold-handed operator pursues his ends in an indifferent manner that would make even the average hunter bar him from the sportsman's grounds. He is physically at the chair, but mentally he is out of the office. He is at the selfish game of being mentally engaged with more agreeable things.

The patient, trembling and in a most nervous state, watches his every move, and with terror and fear winces from every operative effort. The operator, in his stern, unsympathizing manner, has eliminated every impulse in the patient to resist pain. He has robbed the patron of every hope of enduring the torture; he has driven from the patient the thought of respect for the profession of dentistry. He has not spoken a kind word nor looked pleasant a moment during the ordeal, and one hour under his unprofessional care has lacerated every nerve and broken down the major cells of neural energy, and the release from that dental chair has only brought remorse and nervous prostration.

Has this cruel, business-aided, stern featured, cold handed dentist accomplished any good? The severe and repeated shocks to the patient has brought on a lifelong dread of dentistry; it has induced a feeling of contempt for men of our calling; and because of this wrong conception of our vocation causes that patient to neglect his or her teeth for the remainder of life, and by such inattention likely induced other physical ailments and provoked an early death. That dentist—or, I was about to say, butcher, for such the public has denominated many of our

professional kin—has built up a little, but destroyed all. The time will come when such reckless indifference for human feeling will be paid off by a state board of dental examiners temporarily suspending the license or privilege to practice.

One cruel dentist can do more damage to a healthy growth of dental respect, and can produce more disregard for oral hygiene, than a score of dentists can re-establish.

The cause for fear to visit the dentist is quite largely our own fault; and nothing will create a higher regard for the service of our profession than that we kindly and with sympathy perform our restorations, and that we may all learn that the truly educated man in any field of labor is gentle, kind and sympathetic.

Of course, there is another feature in this theme of why people fear to come to the dental office, and that is the sinister talk engaged in at the family table, where the elder ones too frequently describe the tortures of the dental office. Sometimes these moving pictures and word paintings are exaggerated in the hope of impressing the auditors with the bravery of the speaker. They will tell how a certain dentist dragged them all over the floor in the hope of extracting a tooth, which, when it was taken out, was the largest the dentist ever pulled. Now, these common, every-day tales (which are seldom true) make a very deep imprint on the minds of children, who hear and see twice as much and twice as well as do the adults. Then, when the time comes to have dental service, either on the temporary or first set or on the second set, they recall in bold relief how Aunt Jane or Uncle Bob, in all heroism, underwent the terror of having dental work done.

Another common cause for this child dread for the dental office lies in the fact that many parents, in order to induce the boy or girl to be good, employ dental torture as a punishment. They will say: "Now, if you do not behave I will take you to the dentist and have all your bad teeth pulled."

This distressing mental punishment has a most lasting impression; and it is surprising how frequent this form of discipline is practiced in homes. Naturally the rising generation

avoids the acquaintance of the dentist, who has been pictured as a cruel, necessary evil.

How much better to do as is done in cultured homes, where the parents train the young to respect the dentist. Innumerable are the personal experiences I have had where the mother would say: "Well, we must go and see the dentist, and he will regulate your teeth. Then you will look better, you will be happier, and your health will improve." In this instance the child has been given a fortunate impression of dental service, is anxious to call, and the work proceeds with comfort to the patient as well as with pleasure to the dentist.

When a little lady or a young lad comes for the first appointment,—subsequent to the call for examination or determination of service,—do not attempt to do much that would provoke pain; make every effort to dispel all fear; arrange to get their minds in accord with the ambition to have the work done, and so shape their mental attitude that they will be inclined to help the dentist, and not to rebel or resist his every attempt, and you will make greater and more satisfactory progress in all the subsequent visits.

[To be continued.]

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## COMMENT

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THIS journal has set a pace in dental journalism by giving its readers each month a splendid reproduction of some famous or historic subject of dental connection. The leading literary journals can afford to give their readers such ocular luxury because of two reasons: First, the enormous paid-up subscription list; second, on account of the enormous revenue obtained from their advertising space. The time has come when it is believed that high appreciation from the profession can do the same for dentistry. Subscribe one dollar.

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In a recent paper by Dr. B. E. Lischer on orthodontic treatment the author states that the "once universally used" alloy, German silver, has been practically abandoned in the

construction of regulating appliances. For it was found (he says) that the secretions of many mouths not only caused undue corrosion of its structure, but actually set free large quantities of zinc, which were swallowed by the patient, and this continued dosage of metallic salts into the alimentary tract unfavorably affected the action of the ptyalin and enzymes.

Practitioners who may occasionally have observed signs of corrosion in German silver appliances may perhaps hesitate to believe that "large quantities" of zinc had been swallowed. It would be interesting to know in what state the zinc passed into solution,—whether a chloride or other salt,—and also what part the copper and nickel content played in the alleged unfavorable symptoms. At any rate, we know of one practitioner (a distinguished radiographer) who had so little misgiving as to the effect of zinc in the mouth that he had a cast zinc denture (lower) constructed for experimental trial in his own mouth, in the hope that an appreciable quantity of the metal might be dissolved, and in the nascent state have a beneficial effect upon advancing pyorrhœa. We hope to have the result of his bold and direct investigations in due course; in the meantime the fact may be stated that to all appearances he so far retains his usual good general health.

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#### That Rubber Face-Piece

The rubber face-piece for nitrous oxide administration and the various inhalers made of rubber have an odour that very few patients think attractive while to many it is distinctly unpleasant. As in no case can the odor be considered soothing or stimulating to inspiration, it is perhaps worth while trying to do something to remove or disguise it. For that purpose a writer recently recommended the use of oil of bitter orange. Two or three drops—no more—placed in the face-piece or inhaler will (he says) leave nothing noticeable to the patient and more than a very pleasant odor. In the same way a few drops in the ether mask will effectually disguise the somewhat pungent smell of that drug.

# ORIGINAL CONTRIBUTIONS

## HETEROLOGOUS DENTAL IMPLANTATION

BY PROFESSOR JOHN B. MURPHY

[The readers of THE AMERICAN DENTAL JOURNAL are rendered a special consideration in that Dr. J. B. Murphy, professor of surgery of the Northwestern University Medical School, has chosen to give the report of his remarkable prosthesis of the jaw to this periodical. In conjunction with this report he has also written regarding the formation of human joints, including that of the jaw. We should begin to give this topic more consideration, because there are now more injuries to the jaw on account of modern building construction and automobile accidents. Dr. Murphy's next article on bone surgery as applied to the jaw should interest all readers.—EDITOR.]

The implantation of foreign material is confined to a few situations in the body, and only a few materials can be used. The field must be absolutely sterile, and where osteogenetic elements are present magnesium plates, tubes or columns may be used to advantage. This metal eventually is absorbed. In positions where it is impossible to secure a primary sterile field, as in operations on the mandible, non-absorbable material may be used, particularly in the face, where the circulation is so rich and tissue resistance so great that infection is overcome and the foreign material becomes encapsulated, without a sinus forming subsequently. After the removal of portions of the jaw, as for giant cell sarcoma, an open cantilever silver wire support may be used, and it becomes encapsulated, as is illustrated in the case of Miss S., operated on in May, 1908.

A sarcoma had attacked the angle of the right half of the mandible. The jaw was removed on that side up to the incisor teeth, with evulsion of the head from the capsule. A silver wire model, with a metal head of normal size and shape of the mandible, was inserted in its place. The head was sutured into the capsule and the soft tissues were quilted through the wire

framework and the mucosa of the mouth accurately approximated within and the skin accurately united on the outer surface.

The front end of the framework was inserted into the left half of the mandible for a distance of one-third inch and blocked to prevent its further entrance. The framework was a little longer than the normal conformation of the jaw, and was made so purposely because the jaw on the opposite side was still growing, and we felt that it would more nearly balance the normal side later. Suppuration occurred around the framework, as it communicated with the mouth; a profuse discharge was present for six weeks, and then ceased entirely. The sinus healed and the framework became completely imbedded.

In a report received three years after the operation the patient's physician states that there is no sinus either on the mouth or on the cheek; that the girl's face is a little flattened on that side, but that there is perfect apposition of her teeth in the half of the jaw not excised; that she will now have bridgework done to fill in the alveolar process on the side from which the jaw was removed. There is no deflection of the remaining half of the jaw, either with the mouth closed or with it open.

This implanted framework is not so likely to heal in without fistula formation in less vascular and less resisting tissues of the body. The mouth and face offer the best field for its use.

Small wires or cables made up of a number of fine strands, such as phosphor-bronze wire, may be inserted for security in places where suppuration is present. These materials readily become encapsulated, notwithstanding their primary infectivity.

#### FORMATION OF JOINTS

The first stages of joint development occur during fetal life, when no muscular action is present. The characteristic feature and disposition of the joint surfaces are already formed before the joint can functionate. The final transformation—i. e., the extension of the joint cavity, etc.—occurs only after the joint is put to use. It is determined by the skeletal movements and by muscular action.

The wrist and ankle have a purely endochondral ossification;



HALF OF LOWER JAW, REPLACED IN METAL  
BY DR. JOHN B. MURPHY



the cells of connective tissue grow into the cartilage from the perichondrium, dissolve the matrix of cartilage and unite with one another in the center; there arises a network of medullary (marrow) cavities, in the vicinity of which there is a deposit of salts of lime (a provisional calcification). The medullary spaces extend farther and farther by destruction of the cartilaginous substance; then there are formed by the superficially located medullary cells bone lamellæ, which gradually increase in thickness. The osseous nucleus thus formed slowly increases in size, until finally the cartilage is almost entirely replaced, only a thin layer of it remaining at the surface as a covering for the bone.

The question whether the extremities of bones, the articular surfaces, are subject, as far as their form is concerned, to mechanical laws only, has been much discussed. According to Bernays, the early and typical form of joints appears to be a matter of heredity. The muscles also have a decided influence on the later forms of articular surfaces.

According to His, the development of the body of vertebrates in the ovum is determined and controlled by mechanical laws, while Haeckel considers heredity a determinant factor.

L. Fick states that at the end of the second month the joints show a tendency to shape; still "the greatest irregularity exists in the form of articular surfaces." Among the articular surfaces of phalanges there are no two joints alike at that period.

In regard to the question, What determines the form of articular surfaces? Fick has shown in his monograph that muscular activity is responsible for the peculiar form of the different articular surfaces. By experimenting on young dogs he noticed that the section of muscles is followed by a change in the form of the corresponding articular surfaces, and also of the interarticular space. This corresponds in the changes in conformation resulting from pathologic external limitations of motion occurring in early childhood. By experimental immobilization of the joints of growing dogs the space and form of articular surfaces were changed; the interarticular line became irregular.

As to the question why one extremity of bone becomes a prominent surface while the next extremity becomes an articular cavity, several explanations are given.

Fick says that, besides the muscular activity on account of more active circulation, the multiplication of cells is more marked in one end than in the other; so that it penetrates the latter and forces it to excavate (as in the jaw).

Henke and Reyher explain this by the fact that the muscles force one bone (that on which the insertion is nearer to the articular surface) against the other bone (on which the insertion is further from the interarticular line), so that it determines the formation of a cavity by means of pressure in the former (glenoid cavity).

The essential phenomena, says E. Retorer, concerning the formation of the joint cavity take place when the cartilaginous segments are nearly in contact, and before there is any articular slit. We find that at this stage the superficial layers of the cartilaginous segments are not yet free; the flattened and crowded cells limiting these segments are succeeded by a much clearer connective tissue. This is made up of fusiform and stellate cells, whose numerous prolongations form meshes filled with Wharton's jelly. In other words, the embryonic connective tissue which is not transformed into cartilage has developed into mucous connective tissue the interval between the cartilaginous segments where the future joint will be.

Little by little these meshes become larger and larger, the prolongations of the cells more and more thinned, the cell body less and less clearly outlined, staining with difficulty. In short, the cells, with their prolongations, atrophy and, with the nuclei, disappear, and at the same time the joint surfaces become free. By undergoing mucoid transformation in the interval between the cartilages the embryonic connective tissue gives rise to the first synovial fluid.

On the inner side of the joint capsule the connective tissue persists as closely packed elements, and gives origin to the synovial membrane, which is lined with many tiers of flat cells.

Important arterial anastomoses surround all the larger



DR. JOHN B. MURPHY



joints. From the larger vessels smaller branches pass inward to the ends of the bones, to the periphery of the articular cartilages, and to the capsule. The margins of the cartilages are surrounded by vascular loops. The articular surfaces are, however, free from blood-vessels. The synovial membrane is usually well supplied with minute branches, a rich network being described as being present at the bases of the synovial fringes. *It is in the terminal loops of these that the infective micro-organisms find lodgment, and from which they subsequently make their escape into the joint in hemaïogenous synovitis.*

The lymphatics are well developed directly beneath the inner surface of the synovial membrane, and while it is certain that they absorb from the joint, direct openings into the articular cavity have not been demonstrated.

The regeneration of cartilage, as of bone, depends on the return of the essential cellular structures to their embryonal form, their proliferation and subsequent differentiation into the type of the elements composing the tissue. The ligamentous cartilaginous redevelopments from connective tissue are beautifully illustrated in the ligaments and cartilages that develop around and in an ununited fracture of the tibia, humerus or femur.

From a practical point of view the classification of joint conformations is as follows: Synarthrosis, amphiarthrosis and diarthrosis. The latter is divided into:

Ginglymus—

Elbow.

Ankle.

Wrist.

Ginglymo-arthrodial—

Knee.

Temporo-mandibular (jaw).

Enarthrodial—

Shoulder.

Hip.

The diarthrodial joints are the joints that most concern us in surgical work.

The conformation of bones at a joint has very important

relation to its motion, pathologic processes, to the obliteration of motion after disease, and to the possibilities of its restoration by arthroplasty. The ligamentous portion of the capsules as altered by pathologic processes is much more important than was formerly believed.

The types of motion present in these joints are the hinge, ball and socket, which are the sliding and rotary motions of the forearm, shoulder and hip; the two latter are the most favorable for the restoration of motion after ankylosis, as the degree of sliding motion is extremely limited compared with that of the elbow, jaw and knee.

The embryology of joint formation is best illustrated by the works of Hertwig, Meyer and Gegenbaur.

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## FLAG OF WORLDLY WEAVE

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BY DR. BERNARD J. CIGRAND,

National President of the American Flag Day Association and Personal Representative of  
President Woodrow Wilson

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About twenty-five years ago your editor placed a notice in all the large dailies of Chicago inviting all persons to gather at the Grand Pacific Hotel for the purpose of arranging to celebrate the 113th anniversary of the birthday of the American flag, in honor of June 14, 1777, when the continental congress adopted the stars and stripes as our national standard. An organization was founded which has done service in inculcating veneration for the flag of our nation. Eleven governors and thousands of mayors annually declare June 14th Flag Day, and instructive and patriotic exercises are held, at which a broad, liberal spirit of Americanism prevails.

Chicago this year had invited President Wilson to assist in the celebration, but he had already accepted an invitation to deliver the Flag Day address in Washington, D. C., and regretted his inability to come, though he delegated your editor to represent him at the Hamilton Club und Lincoln Park celebrations. Much as I valued such a high compliment, I felt

the task above my ability (though I accepted it and immediately prepared the address, and, as custom requires, sent an advance copy of it to the president for corrections or eliminations). He promptly returned the address without a change, and thanked me for the tone of it and the kindness I had shown to him personally. As published by the press in full it is as follows:

"Careful study of the evolution of the American flag will disclose the fact that it represents a government founded upon the wisdom of the ages," said Dr. Cigrand, "and that in the creation of the banner there was fused the patriotic blood of civilized Europe.

"We find that in the great campaign for freedom, as fought out on our soil, that the patriotism of France in the personality of LaFayette; the heroism of Germany in the individuality of Baron von Stueben; the daring of Ireland was in the spirit of Sullivan; the financing hand of English blood was seen in Robert Morris, and other nationalities were equally eager to assist in establishing a flag which shall symbolize equality and liberty.

"The bravery of Poland was displayed in the fortitude of Kosciusko. The courageous services of the Scandinavian people is blended into the banner, and their struggling, self-supporting colony forms an inspiring chapter in our country's history. The Dutch, too, with their great love for governmental or public schools and their thrift, are not alone impressed upon the Empire state, but their sturdy loyalty to the formative period of our nation is blazoned on the standard of our land. The Spanish in the south and west of our defensive colonies demonstrated their valor on many a field of the Revolution, and the Italians proudly point to the initial lines of our country's career in the man who pushed the curtains aside and gave us the new world.

"That flag was born away back in the dim centuries, when men and women were struggling for freedom; when under the lash the Hebrews were being sold and enslaved to the Egyptian masters. The stripes on that banner were formed long centu-

ries ago, when kings and feudal tyrants demanded life service, in order that regal and lordly mansions might be decorated with costly gems and embellished with silks and tapestries.

"Just what the colors of the flag would be their enslaved imagination could not foretell; just what forms or emblems would stand out on the floating sheet their impoverished minds could not discern; but they knew that—some time, somewhere and somehow—the Lord of creation would assist in devising a banner around which the king-ridden servants of God would gather, and in one supreme and tremendously heroic campaign they would rally around the 'sign of liberty.' Their dream has come true. Today in the skies and in the forests and in the cities, on the hilltops and in verdant valleys, there floats the dream flag, born by an act of the continental congress June 14, 1777.

"Today and now the same mingling of European blood finds that flag defended on 'foreign shores.' A man sits at the helm of our nation who fully realizes the deep and abiding love which the American people have for that flag and the sacred things it represents. His determination that its tricolor shall be respected the world over, and that it shall really signify a flag of the broadest and safest freedom—where the rich shall not be allowed to usurp; where the idle hands shall not be placed where they control; where the poor man in the cottage shall be the equal of the man in the castle, and encouraged in the pursuit of individual happiness. The flag shall represent the basic principles of the constitution. Regardless of religion, politics or tint of skin, President Wilson has determined to serve in the spirit of justice, and the flag under his care shall mean what it is—the hope of the liberty-loving world."

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We must impress dentists that back numbers of THE AMERICAN DENTAL JOURNAL will cost 25 cents per copy. The only way to be sure of better service is to pay \$1 and get twelve (12) (xii) copies, or a year's subscription.

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## RADIUM, THE MAGIC METAL

BY PRISCILLA LEONARD

[Dentistry is receiving wonderful aid by the employment of radium. Every day is adding new discoveries to its use and value. Both as an illuminator and a tonic we are becoming more convinced of its remarkable elements. It seems a strange story that so few people know nothing of its discovery; that they are uninformed as to the labor rendered by a woman; how she encouraged a researching husband, and how the world now actually owes her its heartiest gratitude. Read this fascinating story.—EDITOR.]

[Continued from page 120 of the May issue.]

It may be that all atoms, instead of being whole and stable, are continually breaking up and liberating energy. Radium is several hundred times more active and volcanic than uranium, it is said, but uranium is also sending out particles from its atoms, too. All atoms may be radio active in some measure.

Here is a new secret of nature, perhaps, an energy in matter, compared with which steam or coal or electricity is nowhere. The power packed into a radium atom rivals that which Niagara itself can exert, and the "mighty atom" becomes a startlingly true phrase.

The whole scientific world is eager to see what the new metal means. In medicine the doctors are all trying experiments. One tenth of a grain of radium (not of the highest intensity, either) placed in a glass tube, wrapped round with a thick sheet of pliable lead, forms a sufficient outfit for the experimenter. The X-ray used in medicine needs complicated apparatus and an electric current. The pinch of radium needs nothing but itself.

In a Vienna hospital a man of 61, who had been four times operated on for cancer of the mouth, was cured in five weeks by having the radium tube applied to the cancerous swelling for twenty-five minutes every other day. An application of twenty-five minutes a day cured lupus on the hand in three weeks. An ulcer of long standing, incurable by the X-ray, has been completely cured by five treatments with radium, without so much as leaving a scar. Consumption, some doctors now

believe, can be cured by breathing in air that has passed over radium dissolved in water. One doctor asserts that a "plaster of radium" would work wonders. But a plaster worth five thousand times its weight in gold would be beyond the reach of most patients, and can never be expected to become a patent medicine.

Dr. Morton, of New York, however, proposes to prepare, with "radio-active liquids," treated by the new metal and absorbing its magic properties, a "liquid sunshine" which, when swallowed, "will bathe a patient's entire interior in violet or ultraviolet rays."

One thing is certain—that radium kills bacteria cut of hand.



MADAME CURIE.



M. PIERRE CURIE.

#### GREATEST CHEMICAL RESEARCHERS

Culture tubes full of thriving bacilli have been exposed to a pinch of radium, and three hours afterward every trace of life was gone.

But doctors are finding out, too, that the rush of the radium electrons makes changes in animal tissue wherever it goes through them. A tadpole, under radium, either dies or grows into a monster with a queer breathing apparatus. Mice lose their fur and die of paralysis; rabbits die under too much radium, or grow white hair under smaller amounts. Guinea-pigs have diseases of the spinal cord. The larvæ of insects die or develop in unusual ways. Radium, indeed, seems to play pranks of its own with everything.

The known qualities of the magic metal have suggested some curious speculations concerning its possible use in warfare. A radium tube of no very great power will explode a highly charged electric battery. The magazines of a warship, although enclosed in iron walls, might perhaps be exploded by a radium tube of great intensity, brought near, under water, by the enemy.

Perhaps it is just as well there is so little radium to be had, for its wondrous powers might be turned to deadly uses if it were common. Even scientific experimenters find radium a somewhat dangerous plaything to handle. Professor Becquerel, carrying a tube of radium in his pocket on a visit to London, where he intended to use it in a lecture, found, a fortnight later, a painful sore developing on his side, which began with a reddening of the skin and ended in a deep ulceration. The radium electrons, bombarding away through the glass of the tube, the lead covering and several thicknesses of clothes, had journeyed through skin and flesh, too, and left their results.

But although the radium itself is rare, its property of making other substances radio-active multiplies its powers. As iron rubbed on the magnet becomes itself a magnet, so a bit of zinc sulphate or a piece of wood may gain all the virtues of the magic metal when exposed to its rays. The fingers of the man who experiments with radium may become phosphorescent and radio-active.

Frederick Soddy says that radium continually gives forth what is called an "emanation" (for lack of a better name), and that this settles, in a thin radio-active film, upon everything around. It can be scraped or sandpapered or washed off, and then appears on the sandpaper, in the water and so on. It does not last very long, but wears off gradually, unlike the radium itself. But while it lasts it has all the magic powers of the original.

Another strange thing that radium does is to test the diamond infallibly. Brought near a tube of radium in a dark room, a genuine gem glows through and through with living light, while a paste stone remains dull and dark. Professor

Curie made this power of radium the subject of experiment at a reception at Lille, to the great delight of the guests whose diamonds were genuine.

So far, America has about one-fourth of the radium in existence. France and Germany have nearly all the rest. But, as aforesaid, there is not enough altogether to heap high a table-spoon.

At the St. Louis exposition some years ago a special exhibit of radium was made in the United States building, and another exhibit in the Mines building, under the auspices of the Geological Survey.

Professor Curie has lately refused the cross of the Legion of Honor from the French government. The reason is simple—because the same honor was not awarded also to Madame Curie. Why France should make the extraordinary blunder of not recognizing and rewarding her, the greatest woman chemist, famous the world over, is hard to understand.

Perhaps Professor Curie's action is all that is needed to change matters. But whether she ever wears the cross of the Legion of Honor or not, Madame Curie will always be known among the world's great scientific discoverers, and will forever be associated with the marvelous metal which, with intuition and perseverance she sought for seven years, and found at last.

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## WEIGHED IN THE BALANCE AND FOUND WANTING

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[The following editorial by Dr. E. C. Kirk in the *Dental Cosmos* for June deserves the widest possible publicity, since it will aid in preventing other legislatures from blundering as did Virginia.—EDITOR.]

We are informed that the law enacted by the legislature of Virginia, and approved March 14, 1910, governing the practice of dentistry in that state, has been rescinded, or at least that portion of the law embraced in section 2, which provided that "from and after January 1, 1914, Anno Domini, the practice of this specialty in this state shall be a branch or specialty of surgery; and no person, after this act goes into effect, shall be given the examination or a certificate required by section 4 of

this act, unless he shall first show to the satisfaction of the examining board provided herein that he has passed the examination provided by law for applicants to practice medicine or surgery, and has received from the Virginia State Board of Medical Examiners the certificate thereof, as required by law to be given by them to such applicants."

That is to say, the effort to define the nature and status of dentistry by legal enactment, and to make dentists out of physicians by the same scheme, has met the fate of Belshazzar's kingdom by the analogous method of being "weighed in the balance and found wanting."

How long must we suffer delays and obstruction to professional progress by the efforts of purblind enthusiasts, who attempt to fit conditions to definitions, rather than to adopt the plan of seeking the truth and defining it later in relation to practical results?

The section of the act herein quoted says: "From and after January 1, 1914, the practice of this specialty [dentistry?] shall be a branch or specialty of medicine and surgery." Beautiful and reassuring as is the truth contained in this legislative pronouncement, we can not help asking: What was it before the act, or in what way has it been changed since the passage of the act, or how will it be changed after the reported repeal of the act that gave the dental profession in Virginia a new legal baptism and official designation? What has dentistry ever been, what will dentistry ever be, other than "a branch or specialty of medicine and surgery?" And can any conceivable legislative gyrations ever make it anything else than that which it now is and ever has been—a department or specialty of the science and art of healing; i. e., that which we group under the inclusive general term of medicine?

The attempt to legally rearrange its character and relationships by legislative enactment suggest analogies with the attempt of a certain bucolic legislator who, under the impulse of painful memories of his earlier school-day mathematical experiences, introduced a bill into the legislature of his native state providing that the diameter of the circle should be exactly

one third of its circumference, in order to avoid the practical inconvenience arising from the use of the four-decimal-place fraction inseparably related to  $\pi$ . The bill in that case did not become a law, as did section 2 of the Virginia statute of March 14, 1910.

It seems evident that the purpose of the redefinition of dentistry in Virginia was to enforce the "medical education" of dentists by compelling the prospective applicant for dental license to get his dental education in a medical school. Here, again, is evidence of a fundamental misconception of the broader conception of the term medical. Is not everything taught in a properly conceived and organized dental school medical in its essence and its purpose? If not, why not? The dental school in which the therapeutic and prophylactic ideal does not dominate and color all of its teachings would be little more than a technical trade school.

Dental schools, then, as a matter of fact, are teaching medicine in so far as it is applicable to the specialty of dentistry, and the line of advance will be to improve and expand the medical ideals of dental teaching. The expectation that the highest efficiency in dental education and practice may be attained through the training afforded by the conventional medical curriculum is a futile one, because in brief terms the medical curriculum does not fit the demands of efficient dental practice. Nor can it be made to do so, for the self evident reason that the trend of all educational curricula is toward adaptation to special ends,—mainly utilitarian,—and the medical curriculum will constantly evolve toward the ideal of making better physicians, while that of dentistry will develop toward making more efficient dentists, utilizing for that purpose all of the resources of medical science and art that are adaptable to its purposes.

The rescinding of the dental statute of Virginia is significant of the practical unsoundness of the principle of making dentists through the agency of the medical curriculum.

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### A Chance for Every Tooth

Sir Andrew Clark, president of the Royal College of Physicians and Surgeons, told Mr. Gladstone that he had one mouth but thirty-two teeth, and that each mouthful of food should receive thirty-two bites in order to give every tooth a chance. An excellent proof of the truth of this statement is the following:

A sallow-faced, unhappy-looking man came to Dr. B.'s office one day when the writer chanced to be present. He wanted some medicine for dyspepsia.

Among other questions the doctor asked: "How long a time do you usually spend at dinner?"

"I dunno exactly," replied the patient; "ten or fifteen minutes, I guess."

"Does your food taste good?" Dr. B. asked.

"That it does," was the reply; "but half an hour after I've eaten I'm near dying with distress."

"Do you drink much with your food—tea, coffee or water?"

"A pretty considerable amount," answered the man.

"Yours is a grave case," said the doctor; "but I can help you if you'll follow my directions."

Dr. B. gave the man a dark-colored mixture in a bottle and said: "Now it is of the utmost importance that this medicine be taken properly. Put a teaspoonful into your cup of tea or coffee at each meal; stir it in thoroughly, and with each mouthful of food take a very small sip, and then chew, chew, chew, in order to mix it completely with the food. Do this and report to me in a week."

Two weeks later I saw this dyspeptic again, but I scarcely recognized him he was so much improved.

"That medicine of yours works like a charm," he said to the doctor. "I've about forgotten that I have a stomach."

"That's good," responded Dr. B. "Continue taking it in the same way for three months, and you'll be a well man."

Then, as the man went out, Dr. B— said to me:

"The whole story of that man's cure is in the word *mastication*. It is merely what I said to him—chew, chew, chew. But he wouldn't have believed it without the medicine, which was

the simplest. The man was bolting his food, and I stopped it. I've cured hundreds of dyspeptics in a similar way. Indeed, most dyspeptics might cure themselves if they would give every tooth a chance—thirty-two bites to a mouthful, with two for every tooth missing.”

---

#### Amalgam Worked Dry

While it has been proved that it is possible to make the strongest filling with amalgam very dry, in this condition it is very difficult to get perfect adaptation and thorough condensation, especially with amalgam made from high percentage silver alloys. The best all-round results are obtained with amalgam just plastic enough to work comfortably; if the working condition is unduly difficult it is an added factor tending to uncertainty.—  
*Chester C. Farrell.*

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#### Harelip and Cleft Palate

Eugenics Record Office, Cold Spring Harbor, Long Island, N. Y., writes: “We are making a study of harelip and cleft palate with the hope of learning how it may be prevented in children. To do this we need the co operation of every one who can give us any information about cases of this defect. We inclose a small question blank for your guidance in reporting the cases. We do not expect that you can answer every question in full, but we shall be grateful if you will answer as many as convenient, even if it be only one, and add whatever else you can think of which bears upon the case. (We should be especially glad to have answers to questions 2, 3, 4, and 6). Any information you may send is used for scientific purposes only and will not be published, so there can be no embarrassment to you or any other person concerned. If you will do what you can to aid us in this investigation you will be doing a considerable service for mankind.”

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#### Vegetables with Medicinal Properties

Many of the most familiar fruits and vegetables have distinct medical values. The proper attention to the things we eat, then, will make them serve both the purposes of food and



medicine, and will enable us to save some of the money spent on remedies and doctor bills. The following are some articles of diet which are known to have medicinal qualities:

Apples, carrots and Brazil nuts are excellent for sufferers from constipation.

Asparagus stimulates the kidneys.

Bananas are beneficial to sufferers from chest complaints.

Beets are fattening and good for people who want to put on flesh. So are potatoes.

Celery and onions are nerve tonics.

Cranberries are astringent, and correct the liver when it is suffering from inaction caused by overeating.

Dates are nourishing, and also prevent constipation.

Grape juice is a laxative, but the skin and seeds are likely to cause constipation.

Honey is a good substitute for cod-liver oil.

Lemon juice is excellent as a gargle for sore throat.

Lettuce has a soothing effect on the nerves, and is excellent for sufferers from insomnia.

Onions are conducive to sleep. They quiet the nerves and are good for colds.

Parsnips, like sarsaparilla, are good for the blood and to tone up the system.

Tomatoes are good for a torpid liver, but they should be avoided by gouty people.

Watercress is an excellent blood purifier.

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#### Are False Teeth an Italian Invention?

No doubt the statement of a firm of manufacturers that they sell over 12,000,000 false teeth a year is well founded, since everyone uses them these days. It seems, however, to recall to memory the fact that the use of artificial teeth is just a little over a hundred years old.

The first successful maker was Giussepangelo Fonzi, an Italian dentist, who started practice in Paris in 1798, and, thanks to his skillful treatment of Lucien Bonaparte, soon made his way. After years of experiment he discovered the substance

from which artificial teeth are still made, and received the gold medal of the French Academy of Science. One of the earliest persons fitted with false teeth was the empress of Russia. After Waterloo Fonzi migrated to London, and then to Madrid, where Ferdinand VII of Spain rewarded him with a yearly pension of a thousand ducats for a set of false teeth.

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## TRANSMUTATION AMONG MICROBES

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BY MME. VICTOR HENRI

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[It is with considerable gratification that your editor presents this splendid article regarding the startling discovery of a woman, Mme. Victor Henri, whose research work in bacteriology has caused the investigators to "sit up and take notice." If she can prove her position, it will revolutionize much in our methods of treatment. Keep your eye on the ultra-violet rays.—EDITOR.]

All microbes have originally had a common origin.

The first account of these investigations has led to such misunderstanding, due to an error in translation, that Mme. Victor Henri, with her husband's aid, drew up an account of what she professes to have ascertained concerning microbes. This was put into English with her sanction. It will be seen that the lady bacteriologist is not to be held responsible for some of the rather bold speculations indulged in by others in connection with her labors in her husband's laboratory. Some of the deductions therefrom may have to be corrected. The paper communicated to the public does, however, state that the Henris have been successful, chiefly as regards the anthrax microbe, or *B anthracis*.

In this microbe Mme. Henri has discovered two distinct, complete and stable transformations. The microbe, which is linear in appearance,—what the French call a "batonnet,"—becomes transformed after a certain exposure to ultra-violet rays into a dotted "cocciiform" microbe, which remains fixed.

This last (during the past three months under observation) has multiplied indefinitely, and has produced a peculiar malady in subjects into which it was inoculated. Finally a second form of microbes has been produced, resembling irregular filaments.

[To be continued.]



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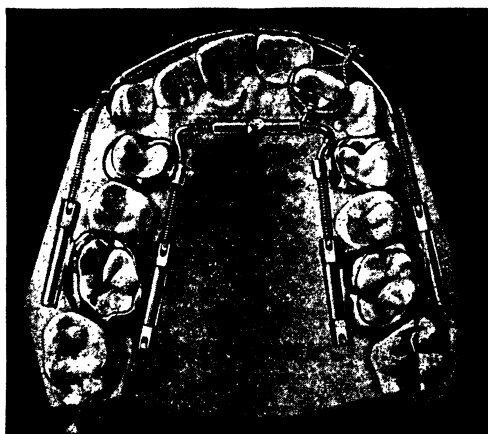
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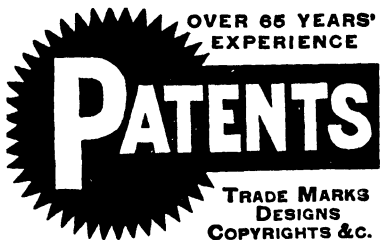
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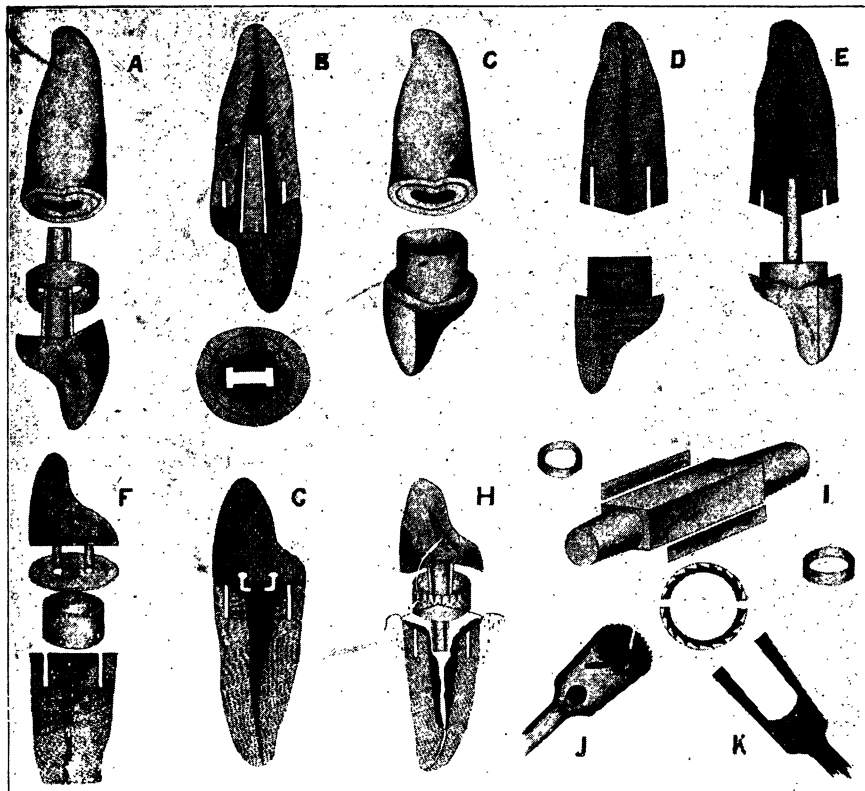
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Vol. XXXII

SEPTEMBER, 1912

No. 9

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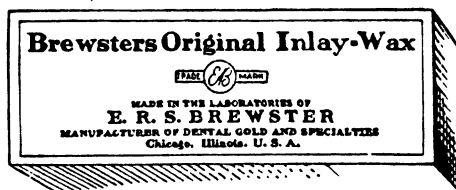
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